

ABSTRACT

A method of expanding types of synchronous motors capable of reducing the number of required stator types to use stators in common, and a synchronous motor produced by the method. A group of stators are prepared by stacking stator cores of identical shape so that heights of the stators are different from one another to be multiples of a fundamental height. A plurality of groups of rotors are prepared so that lengths of the rotors in each group are different from one another to be multiples of a fundamental length. The rotors in each group are provided with permanent magnets having a residual magnetic flux density different from that of the permanent magnets for the rotors in the other groups. A stator and a rotor corresponding to a preset output torque specification value and a preset rotor inertia specification value are respectively selected from the group of stators and the rotor groups and are combined with each other, whereby an expanded type of motor is obtained.